



iMRI Invited Session

SY01-3

Brain Network Analysis on Neurodegenerative Disease and Cognitive Neuroscience Applications

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During the past decade, mapping complex structural and functional networks in living human brain using non-invasive neuroimaging technologies has been widely developed and employed on a variety of cognitive and clinical neuroscience researches. Among all modern neuroimaging technologies, magnetic resonance imaging (MRI) has been considered as one of the most reliable and reproducible neuroimaging modalities for exploring the complex brain networks with adequate spatial and temporal resolutions. In this talk, I will introduce how we employ advanced MRI neuroimaging techniques to map the brain connectivity and investigate the complex brain networks through graph theoretical analysis and computational algorithms. The applications on Alzheimer's disease and cognitive neuroscience will also be introduced and discussed.

Keywords: Diffusion MRI, functional MRI, brain network analysis, multiparametric graph theoretical analysis.